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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/774,390	02/10/2004	Daniel S. Yaich	YAIC3001/BEU	9759

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EXAMINER

HAYES, BRET C

ART UNIT	PAPER NUMBER
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3644

DATE MAILED: 08/12/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/774,390

Applicant(s)

YAICH; DANIEL S.

Examiner

Bret C. Hayes

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 16 June 2005.
2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
4a) Of the above claim(s) 4-10 is/are withdrawn from consideration.
5) ☐ Claim(s) _____ is/are allowed.
6) ☒ Claim(s) 1-3 and 11 is/are rejected.
7) ☐ Claim(s) _____ is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____

DETAILED ACTION

Response to Arguments

1. Applicant's arguments with respect to claims 1 – 3 and 11 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 1 – 3 and 11 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.
4. The term "high" in claim 1 is a relative term, which renders the claim indefinite. The term "high" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. The degree of "speed" necessary cannot be ascertained.
5. Further, claim 1, as well as claim 11, recite the limitation "the cannellure" in lines 6 and 2, respectively. There is insufficient antecedent basis for this limitation in the claims. Examiner suggests --a cannellure-- in claim 1 to rectify.
6. The term "approximately" in claim 11 is a relative term, which renders the claim indefinite. The term "approximately" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would

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not be reasonably apprised of the scope of the invention. The metes and bounds of an approximately 45-degree angle cannot be ascertained. How many degrees from 45 degrees would exclude an angle from the claimed angle? Because the metes and bounds of this claim cannot be ascertained, no further action on the merits is possible at this time.

7. Any unspecified claim is rejected as being dependent upon a rejected base claim.

Claim Rejections - 35 USC § 102

8. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

9. Claims 1 and 2 are rejected under 35 U.S.C. 102(b) as being anticipated by ASM

Handbook Volume 07: Powder Metal Technologies and Applications; ASM; 1998;

“Machining of Powder Metallurgy Materials” section, 681 – 687. (*ASM*).

10. Re – claim 1, ASM discloses the claimed invention including a method of *canneluring a **frangible ***projectile comprising the steps of: positioning, in a cutting machine, a frangible projectile body made of a compressed powdered material; rotating the body around a longitudinal axis at a high speed; applying a cutting tool having a flat surface with ****beveled edges to the projectile body in order to machine cut the cannellure. Specifically, ASM is directed to methods of machining beyond the capabilities of conventional Powder Metallurgy, such as pressing, see page 681, “**Design**” passage, for example, especially the second paragraph, “Undercuts on the horizontal plane (perpendicular to the die centerline) cannot be produced if

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they prevent the part from ejecting from the die (Fig. 1). Annular grooves around a part are produced by machining or by making the part in an assembly of two pieces.” (*Emphasis added.*)

Isn't that exactly what a 'cannelure' is: an annular groove around a part, perpendicular to its centerline? And how would one of ordinary skill in the art 'machine an annular groove around a part perpendicular to its centerline'? The inherent answer is by "turning", see next page, "Turning" section. What's involved with turning? Well, based on examiner's experience, both watching and doing, one sets a work piece into a chuck, aligns a cutting tool, rotates the chuck at a certain rpm thus 'rotating the body around a longitudinal axis at speed' and creating a calculable surface feet per minute (sfm). For more detail, see the second and third paragraphs under that heading, for example.

11. So, regarding a cannelure, ASM would appear to anticipate with annular grooves as outlined above. Regarding frangible, as defined by Applicant, ASM would also appear to anticipate with 'a compressed powdered material'. And, regarding projectile, from Fig. 1, ASM would appear to anticipate with what appear to be bushings or bearings, which cannot exclude whatever they are from also being considered as a 'projectile', as a projectile is: a fired, thrown, or otherwise propelled object, such as a bullet, having no capacity for self-propulsion; and, a self-propelled missile, such as a rocket. The first of those two descriptions does not preclude what is shown in Fig. 1 from being a projectile. Regarding the existence of 'beveled edges', examiner notes that most cutting tools inherently come with beveled edges as claimed.

12. It is noted here that Applicant would apparently like to see the examiner read limitations into the claims, which are not clearly presented in the claims. Applicant alleges that the term

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‘frangible projectile’ “is well-known to those in the field of manufacturing small-arms ammunition”, and that the term “refers to a specific type of projectile that designed [sic] to fracture of [sic] disintegrate upon impact, so that it does not penetrate the target”, supporting the allegation with a definition of frangible bullet. While examiner does not disagree with the definition of a frangible bullet at the moment, Applicant’s claim is directed to a frangible projectile, which *can be* a bullet, but does not *need to be* a bullet.

13. The examiner is allowed the ‘broadest reasonable interpretation’ in construing a claim in light of the disclosure. The term “frangible” means: capable of being broken; breakable; and the term “projectile” means: a fired, thrown, or otherwise propelled object, such as a bullet, having no capacity for self-propulsion; and, a self-propelled missile, such as a rocket. Therefore, a ‘frangible projectile’ becomes a breakable object having no capacity for self-propulsion or a breakable, self-propelled missile. While Applicant’s claimed invention is directed toward the field of small arm ammunition manufacturing, examiner cannot read that into the claim. No matter what the intended particularly pointed out and distinctly claimed invention, and even in light of the specification, the limitation merely requires a breakable object, and not the arguably more clearly defining “frangible bullet”.

14. Re – claim 2, ASM discloses a lead-free powder material – examiner could find no reference to lead anywhere in the entirety of ASM.

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Claim Rejections - 35 USC § 103

15. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

16. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over ASM as applied above.

17. Re – claim 3, ASM discloses brass, see page 685, third paragraph under “**Milling**”, for example, as being among the many materials made using P/M technology. Brass, being a subset of bronze, and bronze being a well-known material as set forth in the previous office action, would at the very least obviate its selection as a material of choice, such as the claimed copper tin powder mixture.

Conclusion

Any inquiry concerning this communication should be directed to Bret Hayes at telephone number (571) 272 – 6902. The examiner can normally be reached Monday through Friday from 5:30 am to 3:00 pm, Eastern Standard Time.

On July 15, 2005, the Central FAX Number will change to **571-273-8300**. This new Central FAX Number is the result of relocating the Central FAX server to the Office's Alexandria, Virginia campus.

Most facsimile-transmitted patent application related correspondence is required to be sent to the Central FAX Number. To give customers time to adjust to the new Central FAX Number, faxes

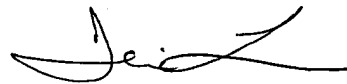
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sent to the old number (703-872-9306) will be routed to the new number until September 15, 2005. After September 15, 2005, the old number will no longer be in service and **571-273-8300** will be the only facsimile number recognized for "centralized delivery".

If attempts to contact the examiner by telephone are unsuccessful, the examiner's supervisor, Teri Luu, can be reached at (571)272 – 7045. The fax number is (703) 872 – 9306.

bh

4-Aug-05



TERI PHAM LUU
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